

Work Order ID 159717

Tuesday, April 18, 2017 11:27:44 AM

159717

Page 1

Item ID: D2500-1-190

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Ext'n - 'I' Beam Tube 4"

Start Date: 4/18/2017 Start Qty: 87.00

87

Cust Item ID:

Required Date: 5/17/2017 Req'd Qty: 87.00

87

Customer:

Reference:

Approvals: Process Plan: APR 18 2017Date: 13

Tooling:

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D2500	' Rev H

100

0.00

100

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: 36026

- a) Extrude as per Dwg D2500
- b) Material: 6061-T6 (QQ-A-200/8)
- c) Minimum yield tensile strength = 35 ksi
- d) Minimum ultimate tensile strength = 38 ksi
- e) Minimum elongation = 8%
- f) Order at 190" long
- g) Bon L Canada Inc. tool # 897105
- h) To be packed per DSK 066
- i) Pull test to ASTM standard B221 required.
- j) Material certification is required

87 APR 20 2017DAS
13
9-89

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

1.74

Packaging

Ensure material certification is attached

96x 5017-5-21

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval <i>PD</i> 17-06-19		
Description Work Order Deviation				Disposition				Completed By	
<i>See NCR 17-6444</i>								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐							
Misidentified ☐	Past Due ☐								

Work Order ID 159717***159717***

Page 2

Item ID: D2500-1-190

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Setup Start

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC6- Inspect dimensions to drawing	0.00				96			DAS 9 CB 17-05-23 9-89
120									
QC	Memo	0.00							
Quality Control	Check Pull test per Dwg D2500 for compliance page attached. Check hardness with Webster tester								
130	Identify as per dwg & Stock Location: LG002	0.00				96			17-05-25 Dxi
130									
Packaging	Memo	0.87							
Packaging	LOCATION : LG002								
140	QC21- Final Inspection - Work Order Release	0.00							17/6/2017
140									
QC	Memo	8.70							
Quality Control									



JUN 20 2017

Picklist Print

Tuesday, April 18, 2017 11:27:44 AM

Page 1

Work Order ID: 159717

159717

Parent Item: D2500-1-190

D2500-1-190

Parent Item Name: Ext'n - I' Beam Tube 4"

Start Date: 4/18/2017

Required Date: 5/17/2017

Start Qty: 87.00

Required Qty: 87.00

Comments: IPP: G 02.09.05 Added DSK 066 KJ/RF
IPP: H 07.07.06 rev G dwg EC IPP Rev: I as per
dwg revH DD 10.02.23 verified byEC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D2500-1-190P

Purchased

No

110

Each

0.0000

1

D2500-1-190P

Ext'n - I' Beam Tube 4"

**

96x 87
SP175-21

SPECIFICATION CONTROL DRAWING

D2500-1-XXX EXTRUSION & D2500-3-XXX EXTRUSION

NOTES:

1) MATERIAL: 6061-T6 ALUMINUM PER QQ-A-200/8 OR AMS-QQ-A-200/8 OR ASTM B221

MINIMUM TENSILE YIELD STRENGTH = 35 KSI
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
MINIMUM ELONGATION = 8%

A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES

2) FINISH: N/A

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX

6) IDENTIFICATION: IDENTIFY WITH DART B/N USING FINE POINT PERMANENT INK MARKER

7) WEIGHT: D2500-1 = 0.143 lb/in, D2500-3 = 0.066 lb/in

8) FOR D2500-1 PART NUMBER IS D2500-1-XXX WHERE XXX IS CUT LENGTH (EX. D2500-1-190 IS 190" LONG). D2500-1 EXTRUSION MANUFACTURED FROM:

- A) BON L DIE # 897105 -> PREFERRED
- B) CARADON MIDEAST DIE # PAH-28030
- C) CARADON MTL DIE # MH-18868

9) FOR D2500-3, PART NUMBER IS D2500-3-XXX WHERE XXX IS CUT LENGTH IN INCHES (EX. D2500-3-100 IS 100" LONG). D2500-3 EXTRUSION MANUFACTURED FROM:

- A) CARADON INDALEX DIE # MS-18867

APR 18 2017

DAS

13

S-89

W10:159717

RELEASED
2010-02-02
MP

H	REDRAW & REFORMAT DWG, CORRECT BON L DIE # TYPO (ZN B8-1), ADD AMS & ASTM MATL OPTION (ZN D8-1), TOLERANCES NOW PER CARADON DWG (SHT 2)	CP	09.07.16
G	ADD DIE NUMBERS & 'DIMS IN INCHES' NOTES	PH	07.04.17
F	CHANGE MAT. TO 6061-T6	DS	97.09.29
E	CHANGE MATERIAL TEMPER	DS	96.10.24
D	ADD MATERIAL PROPERTIES	DS	96.10.07
C	ADD D2500-3 WEB	BW	96.04.26
B	CHANGE INTERNAL WEB	DS	96.03.24
A	NEW ISSUE	DS	96.03.19
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	09.07.16		

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. D2500
SHEET 1 OF 2
REV. H
SCALE
NTS

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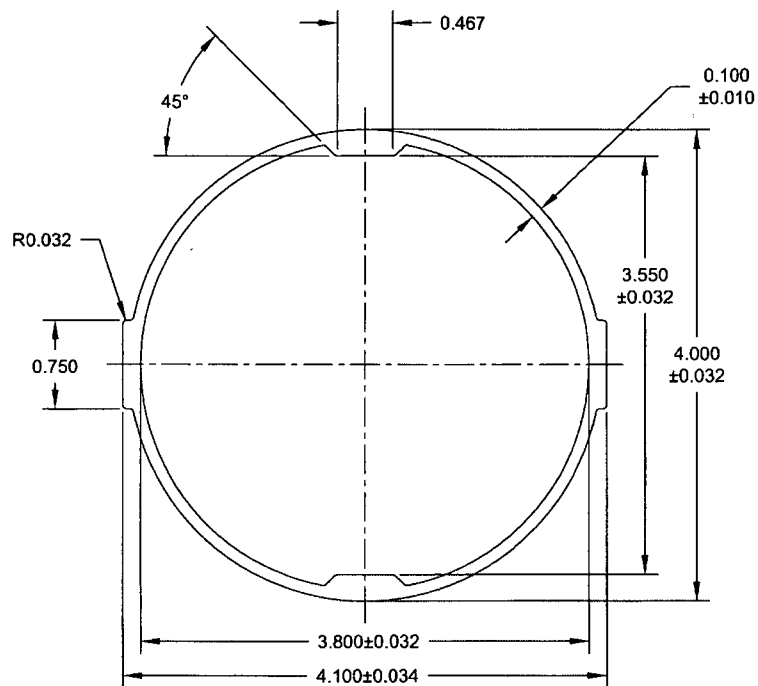
8 7 6 5 4 3 2 1

D

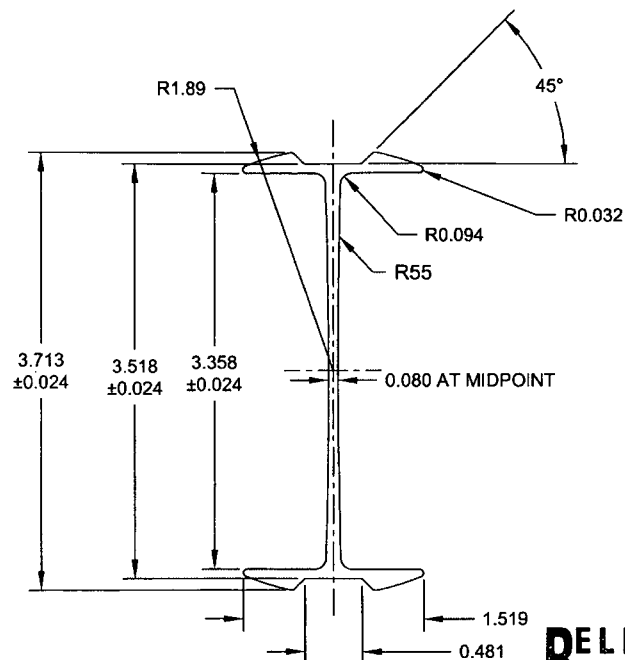
C

B

A



D2500-1



D2500-3

RELEASED
2010-02-02
mp

DESIGN	<i>[Signature]</i>	DART AEROSPACE LTD	
DRAWN	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. H
MFG. APPR.	<i>[Signature]</i>	D2500	SHEET 2 OF 2
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	EXTRUSION	NTS
DATE	09.07.16	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO36026

Purchase Order Date 4/20/2017

PO Print Date 4/24/2017

Page Number 1 of 2

Order From :

VC-BON001

Ship To : DART AEROSPACE LTD

SIGNATURE ALUMINUM CANADA INC.
C/O/ T10322C
P.O. BOX 4488, STN A
TORONTO, ON M5W 4H1
CA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

REvised \$

Contact Name

Vendor Phone

905-427-6550

Ship To Contact

Ship To Phone

Ship Via:

Yours ppd

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

Destination-Collect

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	D2500-1-190P EXTRUDE AS PER DWG D2500 REV. H B159717 DIE # 897105-2	Ext'N -I' Beam Tube 4"	5/17/2017 Yes 5/17/2017		87.00 Each	\$59.24	\$5,153.96
EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF TUBE MATERIAL MUST BE SMOOTH AND FREE FROM DEFECT SCRATCHES,NICKS,DENTS							
Line Total:							\$5,153.96
2	71401-45	PROCUREMENT QUALITY CLAUSES	5/17/2017 No 5/17/2017		1.00	\$0.00	\$0.00
Procurement Quality Clauses A005 right of entry A012 chemical and physical test report A016 personnel qualification A017 raw material identification (as applicable) A026 certification of material conformance A041 quality management system A042 dart notification by supplier A043 retention of quality documents							

Note:

4/24/2017



ACCT# 46024

1850 Clements Road, Pickering Ontario, Canada L1W 3R8 INVOICING AND COMPANY LOCATION

Phone: (866) 587-5780 Fax: (905) 427-2207

Visit us at www.signaturealum.comSIGNATURE ALUMINUM CANADA
1850 CLEMENTS ROAD
PICKERING ON L1W 3R8

PACKING LIST

PACKING LIST DATE / DATE DU
05-17-17PACKING LIST NUMBER / N° DE
031854SALES ORDER NUMBER / N° DE COM
127772

SHIP TO / EXPÉDIÉ À

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
CANADA

PHONE: 613-632-5200

SOLD TO / VENDUE À

DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
CANADA

PHONE: 613-632-5200

TERMS / FREIGHT

PP

REFER TO
THESE NUMBERS ON
ALL CORRESPONDANCEREFEREZ-VOUS A CES
NUMEROUS POUR TOUTE
CORRESPONDANCE

LOCATION

PIC

TRAILER NUMBER /
REMORQUE Nombre

MCGILLION

SALESMAN /
VENDEUR

042

CREDIT REP / REP DU CRÉDIT

SALES REP / REP. DES
VENTES

R. BLAIS

CUSTOMER ID / ID DU
CLIENT

46024

ORDER DATE / DE LA
COM

04/21/17

CUSTOMER PO NUMBER / CLIENT PO Nombre

PO36026

BILL OF LADING NUMBER / NO. DE CONNAISSEMENT

031854

JOB /
FICHIERFIELD SALES REP / REP
REGIONAL DES VENTESCUST SERVICE REP / REP.
SERVICE CLIENTELECARRIER / TRANSPORTEUR
MCGILLION

G.ATTENBOROU

S1S

ITEM NO. / NUMÉRO	ORIGINAL ORDER QUANTITY / Quantité d'ordre ORIGINAL	UNIT / UNITÉ	PREVIOUS SHIPPED QUANTITY / PRÉCÉDENT Quantité livrée	MFG. PART NUMBER / MFG. PARTIE NUMÉRO	ALLOY & TEMPER / ALLIAGE & TEMPER	FINISH DESCRIPTION / DESCRIPTION DE FINITION	NBR OF PKGS / NBR DE PKGS	GROSS LBS / LIVRES BRUT	NET QUANTITY / QUANTITÉ NETTE	UNIT / UNITÉ	QUANTITY DUE / Quantité en raison
001	2,332	LB		DAA-897105-2	6061 T6		4	2,595	2,436	LB	
	1,058	KG		D2500-1-190	190.0000 IN			1,177	1,105	KG	
Y	87	PC		9	Cut(+): 0.1180 Cut(-): 0.0000	Min: -10 % Max: 10 %			96	PC	
				9.89			881030 / 367388	1	622	582	23 PC
							881030 / 367389	1	730	690	27 PC
							881030 / 367390	1	622	582	23 PC
							881030 / 367391	1	622	582	23 PC

SP7-5-21

Transportation/Traffic damages and/or shortage claims are to be noted on the delivery copy of sellers shipping packing lists and signed and dated below by customers authorized representatives.
No return materials will be accepted for credit without permission. The articles and/or services covered by this shipping packing list were produced in accordance with the fair labor standards act of 1938 as amended. Orders accepted subject to the terms and conditions stated on the reverse side.

CUSTOMER ACKNOWLEDGEMENT OF GOODS DELIVERED AND CONDITION

Page 1 of 1

4	2,595	2,436	LB
	1,177	1,105	KG
		96	PC
TOTALS			

DATE OF DELIVERY

DRIVER

**SIGNATURE ALUMINUM CANADA**1850 CLEMENTS RD
PICKERING, ON L1W 3R8**CERTIFICATE OF COMPLIANCE**

Cert Date	Cert No.	Sales Order	Page
05/14/2017	5431242	127772	1
Cust PO	B/L No	Lot	Date
PO36026	031854	881030	05/17/17

Sold To	Ship To
46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA	46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA

Item No	Part No	Item Description	Cust Part
001	DAA-897105-2	190" Mill 6061 T6	D2500-1-190
Gross Weight	2,595 LBS		
Net Qty	2,436 LBS	96 PCS	4 PKGS
Specification	Die Desc		
AMS-QQ-A-200/8 & ASTM B221-08	9 9-89		

Mechanical Tests:

<u>Tensile</u>	<u>Yield</u>			
<u>MPA / KSI</u>	<u>MPA / KSI</u>	<u>% Elongation</u>	<u>Conductivity</u>	<u>HRE</u>
301.4 / 43.7	267.6 / 38.8	9.1	N/A	93

Chemical Analysis:

<u>Si</u>	<u>Fe</u>	<u>Cu</u>	<u>Mn</u>	<u>Mg</u>	<u>Cr</u>	<u>Zn</u>	<u>Ti</u>	<u>V</u>	<u>Zr</u>
0.62	0.28	0.22	0.06	0.89	0.07	0.06	0.01	0.01	0.00

*This Material is Made in Canada**This Material is RoHS Compliant*

This will certify that the material described herein has been inspected and tested in accordance with Signature Aluminum Canada's standard sampling and testing procedures or in accordance with the requirements of any specification forming a part of the material description to the extent indicated herein. Data of chemical composition for the material and test results from samples representative of the material are set forth above hereof or in any attachments hereto. This information shows that the material meets the applicable requirements. Inspection and test records are maintained on file. This certificate shall be deemed apart of and subject to the terms and conditions of warranty set forth on the reverse side of our order acknowledgement form. No other warranties are applicable.

S. Mazzotta
Director of Quality
Signature Aluminum Canada Inc

ISO 9001/TS16949 Registered Company

Visit us at www.signaturealum.com

Rev A

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: D2500-1-190
 DATE: 17-05-23

PO / BATCH NO.: PO36026/159717

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 96 X 190"
 QUANTITY INSPECTED: 96 X 190"
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .100
 THICKNESS RECEIVED: .095
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y ☒	
CORRECT FINISH	(Y) ☒ N	
CORROSION	Y ☒	
CORRECT GRAIN DIRECTION	(Y) ☒ N	
CORRECT MATERIAL PER M-DRAWING	(Y) ☒ N	ASTM B221
CORRECT THICKNESS	(Y) ☒ N	
PHOTO REQUIRED	Y ☒	
CORRECT REF # TO LINK CERT	(Y) ☒ N	PO 36026
CORRECT MATERIAL IDENTIFICATION	(Y) ☒ N	
CORRECT M# ON THE MATERIAL	(Y) ☒ N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y ☒	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y ☒	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>CB</u> DATE: <u>17-05-23</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Supplier Non-Conformance Report

Reviewed
DQA:
Date:

Printed on:

Monday, June 19, 2017

Details

Raised Date 5/25/2017	Status Open	Owner Aboud, Robert	Number NCR17-6444
Target Date 6/23/2017	Standard ISO 9001:2008 / AS9100\7.0 Product Realization\7.4 Purchasing\7.4.3 Verification of purchased product		Severity MINOR
Process Inspection		Audit	
Raised By Person Duval, Patrick	Raised Against (Department or Supplier) Signature Aluminum Canada Inc.		Fault Category Material
Details During inspection of D2500-1-190 B159717 PO36026 some impressions where found throughout the tube, which in some case was also visible from the inside of the tube. 16 out of the 96 was found with those defect's			
Keywords		Product D205-634\D2500-1	
Document		Root Cause	
Closed By	Closed Date	Resolution	

Root Cause

Target Date 6/2/2017	Owner Downing, Eric M	Closed Date 6/6/2017	Closed By Downing, Eric M
Details			

Actions

Number	Owner	Target Date	Completed Date
Details		Response	
1	Downing, Eric M	6/2/2017	6/6/2017
Perform a Root Cause Analysis an record all findings		see attached supplier response	

Corrective Action

Target Date 6/23/2017	Owner Aboud, Robert	Closed Date 6/6/2017	Closed By Downing, Eric M
Details			

Actions			
Number	Owner	Target Date	Completed Date
Details		Response	
2	Duval, Patrick	5/26/2017	5/26/2017
Quarantine all non confirming lengths of material		done 5/26/2017	
3	Downing, Eric M	6/23/2017	6/6/2017
contact supplier regarding issue found.		see attached suppliers response	

Implementing Corrective Action			
Target Date	Owner	Closed Date	Closed By
6/23/2017	Aboud, Robert		
Details			

Actions			
Number	Owner	Target Date	Completed Date
Details		Response	
4	Aboud, Robert	6/23/2017	
Review suppliers response and add any necessary actions as needed			

Verification & Review			
Target Date	Owner	Closed Date	Closed By
6/23/2017	Downing, Eric M		
Details			

Actions			
Number	Owner	Target Date	Completed Date
Details		Response	